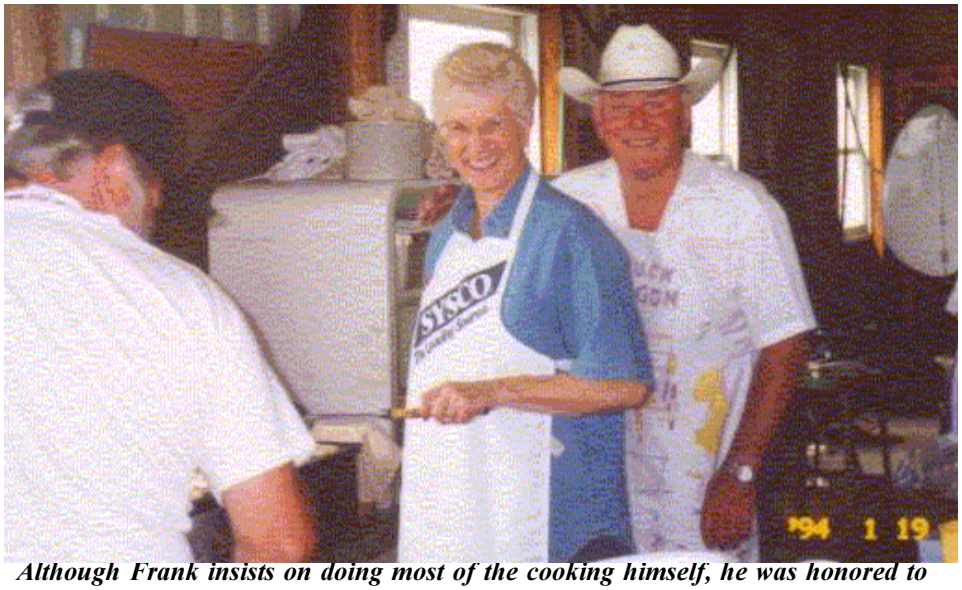
Montana and the Sky

MDT - Department of Transportation | Aeronautics Division | Vol. 52 No. 8 | August 2001

Planes, Trains and Sourdough Pancakes!

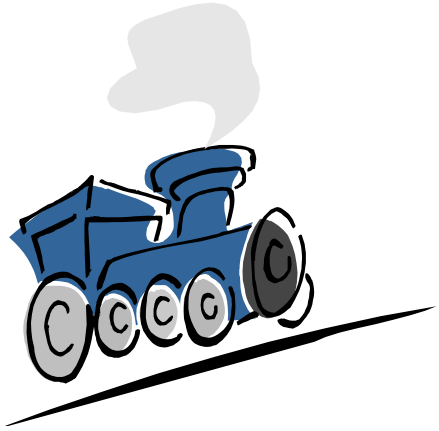
Governor Judy Martz enjoyed her third year of flipping flapjacks at the Father's Day Beacon Star Antique Fly-in Breakfast. In its 23rd year close to 400 people showed up to enjoy Frank's famous sourdough pancakes, eggs & sausage. The annual breakfast attracts aviators and others from all over the state. Thanks to Frank & Patty Bass for hosting this fun event!

More than 50 members of the Montana Antique Airplane Association enjoyed the Charlie Russell Chew Choo Train Ride the evening before the Father's Day Fly-in. The Chew Choo presents a unique 3 1/2 hour scenic train ride aboard 1950's vintage cars from Lewistown to Denton. Passengers travel over three 150-foot trestles built as early as 1926 and through a 1/2-mile tunnel. The group enjoyed the dramatic valleys, wide-open spaces, vibrant colors and an abundance of wildlife. The train was greeted by fellow aviators Jim and Marilyn Lewis as it passed by the Lewis farm and watched as Pete Smith landed on the Lewis runway—seems his daughter had missed the train! The Charlie Russell Chew Choo provides an acclaimed "best full coarse prime-rib dinner East of the Rockies!"



Although Frank insists on doing most of the cooking himself, he was honored to have Governor Martz lend a helping hand.

Aeronautics Board member George Warner along with his wife Rosie enjoyed the Chew Choo Ride with former board member Byron Byers and his wife Pauline.



Administrator's Column

Service Bulletins Not Mandatory - In response to a request for clarification on factory mandatory service bulletins, the Federal Aviation Administration (FAA), Michael Gallagher, manager of FAA's Small Airplane Directorate wrote "A statement that bulletin compliance is mandatory must be FAA approved to be included in the Airworthiness Limitations Section of the Instructions for Continued Airworthiness (ICA). FAA policy does not permit this approval to be delegated to organizations or individuals." Gallagher added - this includes service bulletins issued after the Airworthiness Limitations Section is approved by FAA. ✈

Flying to Canada - The Aircraft Owners And Pilots Association (AOPA) and the Canadian Owners And Pilots Association (COPA) have jointly published a "Guide To Cross-Boarder Operations". The guide provides information on cross-boarder flight procedures, regulations, customs requirements and fees, air traffic user fees, currency, banking, pets, firearms, sources for charter, and tourist information for both the U.S. and Canada. The guide is available from both the AOPA and COPA. ✈

New Air Tour Bill - Nevada U.S. Senators Harry Reid (D) and John Ensign (R) joined forces and introduced legislation (S. 1151) which, if passed, will credit air tour operators at the Grand Canyon National Park (GCNP) for noise abatement modifications and fleet changes previously adopted and grant those operators relief from new operating restrictions at the GCNP. The Senators said they introduced S.1151 because they were "deeply concerned that the Federal Aviation Administration (FAA) has failed to develop the incentives for quiet technology aircraft." They cited the National Park Air Tour Management Act of 2000, which was part of AIR-21 FAA reauthorization legislation, "called for implementation of reasonably achievable quiet technology standards for air tour operators." The FAA was given a year to develop those quiet technology standards, but missed its April 5 deadline - a failure that previously drew criticism from Rep. James Hansen of Utah, chairman of the House Resources Committee, and Sen. John McCain of Arizona, then chairman and now ranking member of the Senate Commerce Committee. The legislation adopted last year states that aircraft meeting quiet technology standards should be permitted to use preferential operating corridors and be exempt from FAA-imposed caps on the number of flights. Senator Reid said, "This relief is essential to the very survival of many of these air tour companies. By not complying with these congressional mandates, the Federal Aviation Administration places the viability of the Grand Canyon air tour industry in jeopardy." Senator Reid said that both he and Senator Ensign had tried to work with the FAA and other agencies in a cooperative manner, but "our repeated overtures have been summarily ignored, which forces us to take further legislative action. That S.1151 simply requires FAA to do its job. It identifies 'reasonable achievable' quiet technology standards and provides relief for air tour operators who have spent many years and millions of dollars of their money voluntarily transitioning to quieter aircraft to help restore natural quiet to the Grand Canyon." According to Senator Reid, "reasonable achievable" quiet technology includes: replacing smaller aircraft with larger and quieter aircraft with more seating capacity, thereby reducing the number of flights needed to carry the same number of passengers; adding propellers on turbine-powered airplanes or main rotor blades on helicopters which reduce prop tip speeds by reducing engine RPM's; modifying engine exhaust systems with high-tech mufflers to absorb engine noise, and modifying helicopter tail rotors with high-tech components for quieter operation. Senator Reid said "such modifications typically reduce the sound generated by these aircraft by more than 50 percent." That operators who have spent millions of dollars to make such modifications "in our view, have complied with the intent of the law and deserve relief." S. 1151 has been referred to the Senate Commerce Committee. If you feel strongly about this bill, you should contact Senator Baucus and Senator Burns. ✈

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Michael D. Ferguson, Administrator

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Administrator's Column Continued...

Field Approvals - The Federal Aviation Administration (FAA) held a meeting July 19th in Washington, D.C. to discuss growing concerns over its field approval process. Aviation industry groups have strongly criticized the FAA for lack of uniformity between regions and Flight Standards District Offices for field approvals. Hopefully some good will be achieved from the meeting but the results are not known at this time. ✈

Condolences - It was sad to learn of the death of Rose Lynch. Rose Lynch was the wife of Charles A. Lynch, former Director of the Montana Aeronautics Commission who died as the result of an aircraft accident. Rose was a long time schoolteacher in Helena. On behalf of the Aeronautics Board and Division, I would like to extend our sincere condolences to the entire Lynch family. ✈

Calendar

August 2-5 – MAAA Fly-In, Three Forks.
August 4 – Alberta Flying Farmers Fly-In, Fort Benton. Montana Pilots welcome to join.
August 10-12 – Fort Peck Fly-In, Float Planes welcome, camping.
August 10-12 – FAA Family Fly-In and Flight Safety Conference, McCall, Idaho. For info call Jim Cooney (406) 449-5270.
August 10-12 – Eighth Annual Splash-In – Fly-In, Stillwater Landing, Whitefish. For Information/RSVP Contact: Bill Montgomery (406) 881-2236, email stilwind@whidbey.net.
August 25 & 26 – Polson Fly-In – Steak Fry – Polson Airport. For further information call Tom (406) 883-9392.
September 1, 2 & 3 – Cleveland National Air Show, for further information - phone (216) 781-0747, fax (216) 781-7810, website – www.clevelandairshow.com .
September 1, 2 & 3 – Yellowstone Airport Labor Day Fly-In, West Yellowstone.
September 14-16 – Mountain Search Pilot Clinic, Kalispell.
November 8-10 – AOPA Expo 2001 – Ft. Lauderdale/ Broward County Convention Center, Ft. Lauderdale, Florida.

Vintage Aircraft Visit Yellowstone Airport

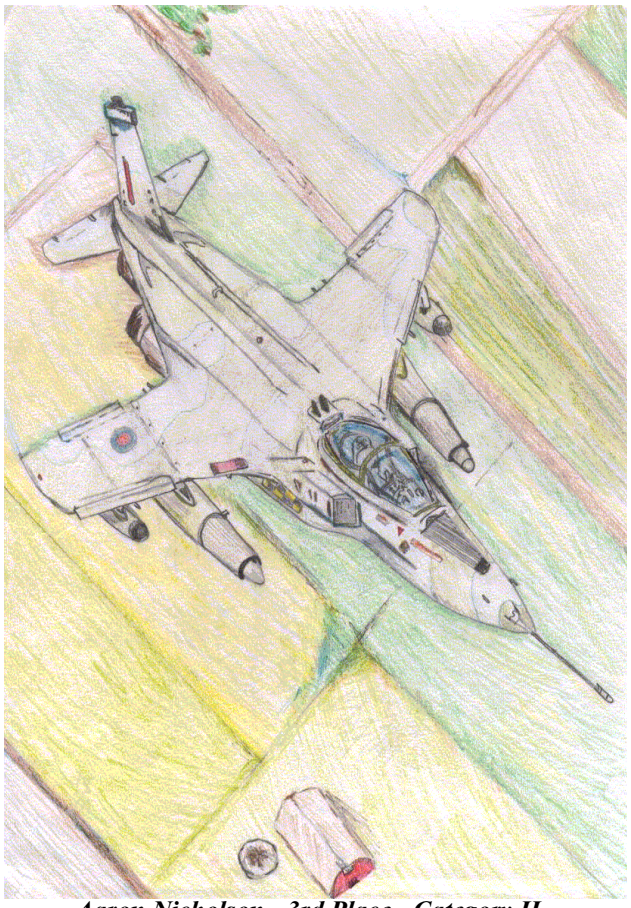
The "Wings of Freedom Tour" made a stop at the Yellowstone Airport and were on display July 13-15, 2001. The three-day visit was one of an eight-stop tour around the United States. The tour showcases a fully restored WWII B-24, originally called the "All American" in tribute to a B-24 that flew in the European theater. In 1999, it was re-painted as "Dragon and His Tail" to honor the Pacific theater veterans. The tour also features the B-17 "Nine-O-Nine", the companion of the B-24 in thousands of wartime bombing and reconnaissance missions. The "Wings of Freedom Tour" has two goals: to honor our veterans and let them know they have not been forgotten; and to educate the visitors to the planes, in particular, younger Americans, about World War II.

More than 300 people attended, including some veterans who actually flew missions in these type of aircraft in World War II. The foundation encourages people to tour the planes, talk to the veterans who come to visit the aircraft, and participate in a "flight experience" if desired. In eleven years, the tour has made more than 1300 stops at cities and towns across the United States and Southern Canada. While the exact number of visitors welcomed each year is difficult to gauge, it is estimated that between 3 and 4 million people see these warbirds annually.

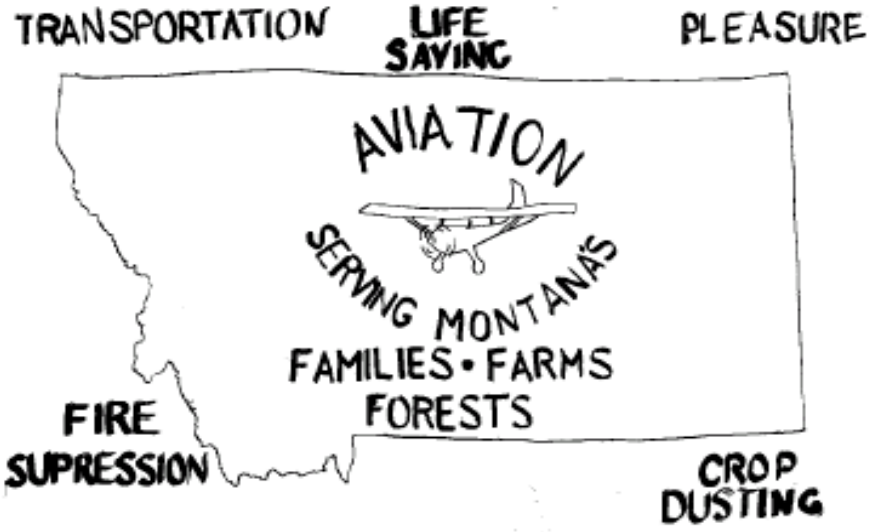
The event was sponsored by the Collings Foundation, which is a non-profit, educational foundation (501-C3), founded in 1979. The purpose of the Foundation is to organize and support "living history" events that enable Americans to learn more about their heritage through direct participation. The original focus of the Foundation was transportation-related events such as antique car rallies, hill climbs, carriage and sleigh rides, and a winter ice-cutting festival. During the mid-eighties, these activities were broadened to include aviation-related events such as air shows, barnstorming, historical reunions and joint museum displays.

Aviation Awareness Art Contest
2nd & 3rd Place Winners

Nathan Hall - 2nd Place - Category III



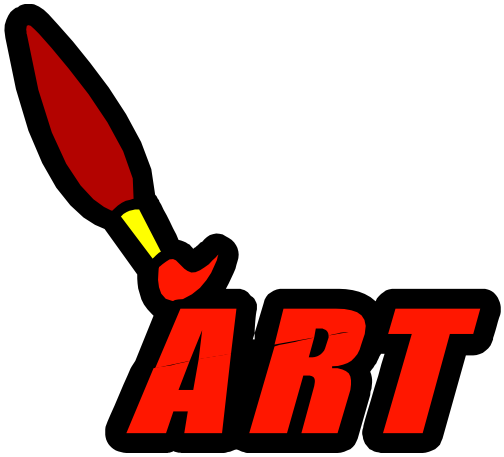
Aaron Nicholson - 3rd Place - Category II

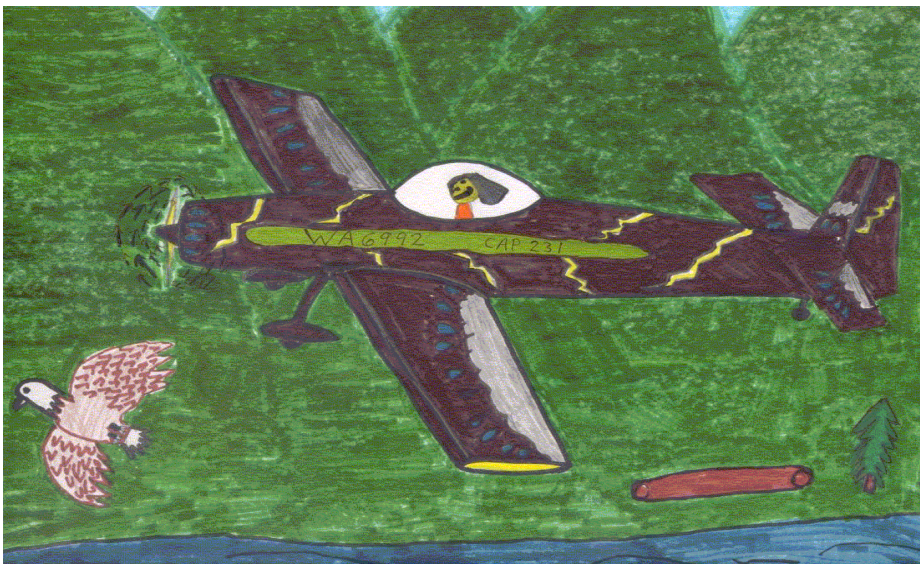


Elizabeth Semple - 3rd Place - Category III

Pictured are Aviation Art Contest 2nd & 3rd place winning entries – Category III (Grades 9-12) 2nd Place - Nathan Hall, Milltown, MT, 3rd Place - Elizabeth Semple, Clancy, MT. Category II (Grades 5-8) 2nd Place - Crystal Dorne, Swan Lake, MT, 3rd Place - Aaron Nicholson, Laurel, MT. Page 5 - Category I (Grades 1-4) 2nd Place - Anna Wood, Swan Lake, MT, 3rd Place - Eric Hanson, Kalispell, MT.

Crystal Dorne - 2nd Place - Category II





Anna Wood - 2nd Place - Category I

Eric Hanson - 3rd Place - Category I

Business Jet Shipments Continue To Buoy Industry

The General Aviation Manufacturers Association (GAMA) announced today that total industry billings hit record highs in the first half of 2001, bolstered by record shipments of turbojet airplanes both to the U.S. and abroad.

At $4.4 billion, total industry billings set a new record, increasing 2.8 percent over the first half of 2000. Export billings also reached record levels during the period, increasing by 23.4 percent to $1.2 billion.

Turbojet shipments totaled 303 in the first half of 2001, up 5.2 percent from the 288 delivered in the first six months of 2000. Turboprop shipments remained steady at 165 units. Shipments of piston-engine airplanes decreased to 816 units, a 5.6 percent decline from the 864 units delivered in the first half of 2001. Manufacturers exported a total of 250 aircraft in the first half of 2001, down from 295 last year.

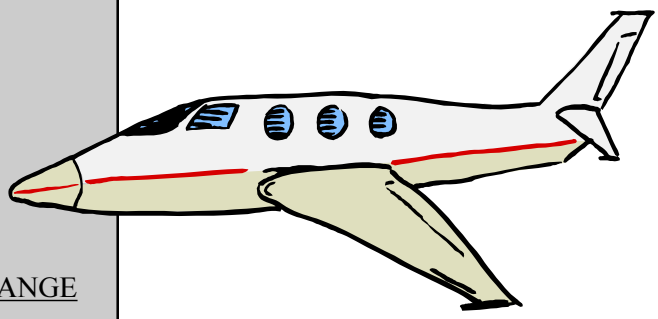
"Despite current economic conditions, general aviation manufacturers continue to benefit from strong demand for a flexible, reliable, cost-effective mode of transportation that can circumvent congested airports and airspace," said GAMA President Ed Bolen. "Strong export billings reflect the fact that appreciation of the value of general aviation is shared around the world."

YTD AIRPLANE SHIPMENTS BY TYPE

	YTD 01	YTD 00	%CHANGE
PISTONS	816	864	-5.6%
TURBOPROPS	165	165	0.0%
JETS	303	288	5.2%
TOTAL	**1,284**	**1,317**	**-2.5%**

SECOND QUARTER AIRPLANE SHIPMENTS BY TYPE

	QII 01	QII 00	% CHANGE
PISTONS	470	465	1.1%
TURBOPROPS	89	87	2.3%
JETS	157	152	3.3%
TOTAL	**716**	**704**	**1.7%**
TOTAL BILLINGS	**$2.3**	**$2.2**	**3.4%**



The Man Aviation History Almost Forgot

Three men were involved in the invention and development of the first powered airplane – that's right, three. Everyone knows about the Wright brothers, but the third man was Charles E. Taylor, a quiet genius who loved cigars and the sound of machinery. Without Charlie, that first powered airplane would never have gotten off the ground, yet his name was almost lost to aviation history.

Charlie Taylor was born on a small farm in Cerro Gordo, Illinois on May 24, 1868. He moved to Lincoln, Nebraska with his family, and at the age of 12 quit school to work as an errand boy for the *Nebraska State Journal*. Charlie was mechanically inclined, so when he began working with machinery in the *Journal*'s bindery it came easy for him.

In 1892 Charlie met Herietia Webbert and they were married two years later. In 1896 the Taylor's moved to Dayton, Ohio where Charlie worked for Stoddard Manufacture, making farm equipment and bicycles. It was in Dayton that Charlie met the Wrights. Mrs. Taylor's uncle rented a building to the brothers for their bicycle business. In 1898, when Charlie started his own machine shop, Orville and Wilbur Wright brought him special jobs.

Charlie eventually sold his business and went to work for the Dayton Electric Co. He didn't like this job, so when the Wright brothers asked him to work for them at $18.00 a week he accepted. He liked the men, and they paid $8.00 more a week than the electric company. Charlie started work with them on June 15, 1901, doing routine repairs on bicycles. This allowed the brothers to pursue their experiments with gliders. After one experiment, the brothers decided to build a small wind tunnel. Building the wind tunnel was the first aeronautics related job that Charlie did for the Wright brothers. The wind tunnel was a rectangular box with a fan at one end driven by a natural gas engine. Charlie ground hacksaw blades and used them for balance in the tunnel. The brothers did many experiments in their wind tunnel, and from this data they began to make their 1902 glider, with Charlie machining many of the parts.

Through their experiments, the Wrights were able to accurately predict the horsepower needed to produce and achieve powered flight. The next problem was getting a light engine that would produce the needed eight horsepower. However, they could not find a company willing to make it for them.

The brothers decided to give the task to Charlie, while they would work on the airframe. Charlie was excited about this new challenge. He knew that the engine design was sound, and though he had only limited knowledge of gasoline engines, he used his craftsmanship and enthusiasm to tackle the task.

Charlie started building the engine in the winter of 1902-03. Without any formal blueprints, each part had to be crudely sketched on paper. After a thorough discussion with the Wrights, Taylor would pin the drawing above his workbench and go to work. Using these sketches, he finished the engine in six weeks – an amazing accomplishment.

Charlie's first obstacle was the crankcase, which had to be light yet strong. Aluminum was a rare metal in those days and it was difficult to get good sound casting. John Hoban, foreman of Buckeye Iron and Brass Foundry in Dayton, took on the job of making the crankcase, using the strongest aluminum he had. The cylinders were turned from fine-grain gray cast iron with four inch bores. The top and bottom of the cylinders could be threaded into the crankcase and then a water jacket threaded on them.

The next major task was making the crankshaft. His only tools were a drill press and lathe run by natural gas and hand tools. On a plate of high carbon tool steel that measured 1-5/8 inches thick, six inches wide, and 31 inches long he traced an outline of the crankshaft and carefully, painstakingly drilled hundreds of holes along it. This weakened the plate enough so he could knock the excess material away with a hammer and chisel. Once this was done he had the rough-cut crankshaft ready for the lathe and finish cut. With the small, natural gas engine chugging away at full power, driving the large wide leather belts that turned the lather, Charlie turned out a near perfect crankshaft. The next part that Charlie worked on was a flywheel from a solid block of cast iron.

The connecting rods, intake valves, exhaust valves, pistons, valve guides, rocker arm, and numerous other parts that made up the complete engine were carefully thought out and tailored to fit the operation of the engine. Charlie painstakingly assembled the engine part by part, fitting and refitting each piece with the meticulous care of a jeweler making a watch. He scrutinized every detail. He assembled and disassembled the parts, time and time again, making sure of their operation until all the parts were working in harmony.

It took a lot of genius and ingenuity, but the engine was finally completed and assembled in February 1903. It was mounted on a test stand, producing eight horsepower at 670 rpm and 11 hp. at 1000 rpm. Charles E. Taylor had successfully built the first aircraft engine.

Since the engine produced 12 horsepower at full rpm, the Wright brothers were able to add another 150 pounds to the aircraft, allowing them to strengthen the wings and framework. Charlie made all of the metal parts, such as the metal fillings joining the wooden struts, and the spruce spars and Roebling truss wires attachments.

The *Flyer* was assembled and the engine was installed on November 2. To reduce the danger of the engine falling on the pilot in case of an accident it was placed on the lower wing, to the right of center. When the engine was started, the vibration from the irregular firing caused failure of the prop shaft extensions. Charlie made new shafts out of solid steel, which held up during the first flights.

On December 17, 1903, in the mid-morning, the first successful powered aircraft lifted off and flew 120 feet in 12 seconds; thus introducing a new era of transportation. Although the first flight wasn't publicized much, Charlie and the Wright brothers were very excited.

Charlie and the Wrights built a hangar to house the airplane and moved into the new facility on April 20, 1904. Charlie took care of the field and building while the Wrights were going around the country and world. He was the first airport manager.

In a 1948 interview, Charlie said that he had "always wanted to learn to fly, but I

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Aviation History
continued....

never did. The Wrights refused to teach me and tried to discourage the idea. They said they needed me in the shop and to service their machines, and if I learned to fly I'd be gadding about the country and maybe become an exhibition pilot, and then they'd never see me again."

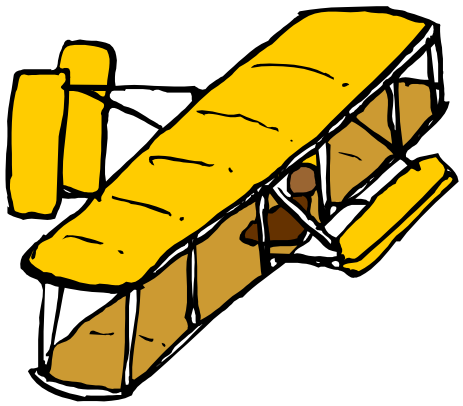
The Wrights were trying to sell the aircraft to the military and started to do demonstration flights on September 3, 1908. Orville flew and Charlie kept the aircraft in good flying condition. On September 17, Charlie was to fly with Orville, and larger propellers were installed to compensate for the heavier weight of the two men. At the last minute Charlie was replaced by Lieutenant Thomas Selfridge, a 20-year-old West Point graduate from San Francisco. During the flight Orville heard a strange noise. He looked around, but didn't see anything. Suddenly, there were two large thumps and the aircraft shook violently as Orville tried to guide the aircraft to the ground. About 20 feet from the ground the aircraft started to correct itself, but it was too late. Lieutenant Thomas Selfridge became the first passenger casualty in a powered aircraft. Charles was the first person to investigate a fatal powered flight accident. The new propellers had delaminated.

Charles Taylor continued to work with the Wright brothers until 1911. At this time, an adventurer and pilot, Calbraith Perry Rodgers, wanted to make the first continental flight across the United States. He purchased an aircraft and enough parts for two more aircraft from the Wright brothers. Realizing that the aircraft would not last more than 1,000 miles without proper maintenance, and that Charlie was the only one who could provide that maintenance, he lent Charlie to Rodgers. It took Cal Rodgers 49 days to cross the United States. Three days, ten hours of that was actual flying time. His longest single flight was 133 miles. He had 16 crashes, and the aircraft was repaired so many times that at journey's end only the vertical rudder, engine drip pan and a single strut remained of the original plane – a testament to Charlie's skill.

This was the last of Charlie's big adventures. He returned to Dayton and worked for the Wright-Martin Company until 1920. He eventually moved to California and lost touch with Orville Wright. The Depression hit and Charlie's machine shop failed. He lost his life's savings in a real estate venture and his wife died. Charlie Taylor's contribution to aviation was forgotten until 1937 when Henry Ford was reconstructing the old Wright bicycle shop in Dearborn, Michigan. Detectives found Charlie working at North American Aviation in Los Angeles for 37 cents an hour. None of his co-workers realized he had built the first aircraft engine. Charlie worked for Ford until 1941, when he returned to California and worked 60 hours a week in a defense factory. However, in 1945 Charlie suffered a heart attack and was never able to work again.

In November 1955, a reporter discovered Charlie in Los Angeles General Hospital's charity ward – he was almost destitute. His income was his Social Security and an $800 a year annuity fund established by Orville Wright before his death in 1948. The aviation industry immediately started a campaign to raise funds for Charlie. He was moved to a private sanatorium where he died on January 30, 1956, at the age of 88. Having no close relatives, Charles E. Taylor was buried in the Portal of Folded Wings Mausoleum dedicated to aviation pioneers, located in Valhalla Memorial Park, Los Angeles.

Charles E. Taylor was the last of the three that shrunk the world by building the first successful powered airplane – the mechanic who made the flight possible. ✈



Annual Mountain Search Pilot Clinic

The 23rd Annual Mountain Search Pilot Clinic (MSPC) will be held in Kalispell, Montana on September 14-16. This clinic is designed as a training program for Montana pilots that are interested in volunteering for Montana Aeronautics Division's Air Search and Rescue volunteer network.

The clinic is fast paced with extremely full days scheduled. Volunteer pilots will receive two hours of dual flight instruction from qualified mountain flight instructors, survival training, including a survival field session and emergency locater transmission (ELT) training. Ground school instruction will be held on both Friday and Saturday evening. Thirty pilots are selected to participate each year; you must be currently registered with the state as a Montana Pilot in order to receive an application.

Interested pilots should have a minimum of 250 hours logged as pilot in command, additionally, the airplanes that are provided for mountain flight instruction are Cessna 182s, Hawk XPs and Cessna T-41s, a pilot should have a high performance endorsement with 25 hours of time in a high performance airplane, however, exceptions may be made on an individual basis. A good brush up of flying skills before attending the clinic would be to practice slow flight, review navigation by pilotage and review the effects of density altitude. Any interested persons are welcome to attend the ground school programs.

The Montana Aeronautics Division relies on the volunteers that generously donate their time and aircraft for this very important mission; we are successful in search and rescue because of your efforts and dedication. Thank You!

For further information on the clinic please call (406) 444-2506.

Mountain Flying School

Mountain Search Pilot Clinic flight instructor's attended the McCall Mountain Flying school in June 2001. Pictured are Mike Ferguson, Aeronautics Division; Lori MacNichol, Instructor, McCall Mountain Flying; Jeanne MacPherson, Aeronautics Division; Fred Hasskamp, Stanley Read and Sparky Imeson all Mountain Search Clinic Instructors. Kneeling is Art Lazzarini of McCall Mountain Flying. Also in attendance but not pictured was Wayne Turner, Mountain Search Clinic Instructor. For information on this year's Mountain Search Pilot Clinic see page 7 of the newsletter.

Man must rise above the Earth — to the top of the atmosphere and beyond — for only thus will he fully understand the world in which he lives.

— Socrates

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